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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/040,717

01/07/2002

Wolfgang Singer

637.0016USU

1778

7590

09/29/2004

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EXAMINER

HO, ALLEN C

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/040,717

Applicant(s)

SINGER ET AL.

Examiner

Allen C. Ho

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3-16 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-16 and 19 is/are allowed.
- 6) ☒ Claim(s) 20 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 092004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The indicated allowability of claims 20 and 21 is withdrawn in view of the newly discovered reference(s) to Mori *et al.* (U. S. Patent No. 5,594,526) and Cohen *et al.* (U. S. Patent No. 5,737,137). Rejections based on the newly cited reference(s) follow.

2. Accordingly, the finality of the last office action is withdrawn.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori *et al.* (U. S. Patent No. 5,594,526).

With regard to claim 20, Mori *et al.* disclosed an illumination system, comprising: an optical element (50) having a first raster element (510) and a second raster element (520), wherein the first aspect ratio is not equal to the second aspect ratio (column 14, lines 37-42), and wherein the illumination system defines a segment of a ring field (column 4, lines 22-29).

With regard to claim 21, Mori *et al.* disclosed an illumination system for radiation wavelengths  $\leq 193$  nm, comprising: an optical element (50) having a first raster element (510) and a second raster element (520) of different sizes (column 14, lines 37-42), wherein the

Art Unit: 2882

illumination system defines a field to be illuminated in an object plane of the illumination system, and wherein the field represents a segment of a ring field (column 4, lines 22-29).

5. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Cohen *et al.* (U. S. Patent No. 5,737,137).

With regard to claim 21, Cohen *et al.* disclosed an illumination system for radiation wavelengths  $\leq 193$  nm, comprising: an optical element (10) having a first raster element (11) and a second raster element (12) of different sizes (column 4, lines 53-59), wherein the illumination system defines a field to be illuminated in an object plane of the illumination system, and wherein the field represents a segment of a ring field (column 3, lines 64-66).

#### *Allowable Subject Matter*

6. Claims 3-16 and 19 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claims 3-8 and 12, although the prior art discloses illumination systems for lithography with wavelengths  $\leq 193$  nm comprising a first optical element divided into first raster elements and lies in a first plane, wherein at least two of the first raster elements have different aspect ratios, and a second optical element divided into second raster elements, it fail to teach or fairly suggest that at least some of the second raster elements have an anamorphic optical effect such that an aspect ratio of images of the first raster elements is substantially the same in the object plane independent of the aspect ratio of the first raster elements as claimed in claim 1.

Art Unit: 2882

With regard to claims 9-11, 13, and 19, although the prior art discloses illumination systems for lithography with wavelengths  $\leq 193$  nm comprising a first optical element divided into first raster elements and lies in a first plane, wherein at least two of the first raster elements have different aspect ratios, it fails to teach or fairly suggest that all of the first raster elements are completely illuminated in the first plane as claimed in claim 9.

With regard to claim 14, the prior art failed to teach or fairly suggest an illumination system for lithography with wavelengths  $\leq 193$  nm comprising a first optical element divided into first raster elements and lies in a first plane, wherein at least two of the first raster elements have different aspect ratios, and wherein the illumination system defines a segment of a ring field as claimed in claim 14.

With regard to claims 15 and 16, the prior art fails to teach or fairly suggest a projection exposure system for microlithography comprising an illumination system for lithography with wavelengths  $\leq 193$  nm having a first optical element divided into first raster elements and lies in a first plane, wherein at least two of the first raster elements have different aspect ratios, and a projection device that images a lighted portion of a pattern-bearing mask onto a light-sensitive substrate as claimed in claim 15.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Yamamoto (U. S. Patent No. 6,337,759 B1) disclosed an optical element having a first aspect ratio and a second aspect ratio.

Art Unit: 2882

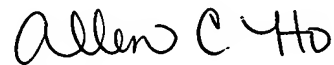
- (2) Sweatt (U. S. Patent No. 5,805,365) disclosed a ring-field lithographic camera.
- (3) Sweatt (U. S. Patent No. 5,512,759) disclosed a condenser for illuminating a ring-field camera.
- (4) MacDowell *et al.* (U. S. Patent No. 5,439,781) disclosed a condenser for producing a ring field.
- (5) Sweatt (U. S. Patent No. 5,361,292) disclosed a condenser for illuminating a ring field.
- (6) White (U. S. Patent No. 5,339,346) disclosed a condenser including a faceted collector lens.
- (7) Jewell *et al.* (U. S. Patent No. 5,315,629) disclosed ring field lithography.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2882

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Allen C. Ho". The signature is written in a cursive, flowing style.

Allen C. Ho  
Patent Examiner  
Art Unit 2882

26 September 2004